JANUARY 1954

FIREMEN

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"Had we kept to the old method of lots of water and straight streams we would have used barrels and barrels of water and perhaps would have lost the entire house. While we are not telling anyone what to use, we are firm believers that the fellows talking about fog know their fire-fighting and hope that more fire departments give it a try."

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*Actual statements by fire chiefs

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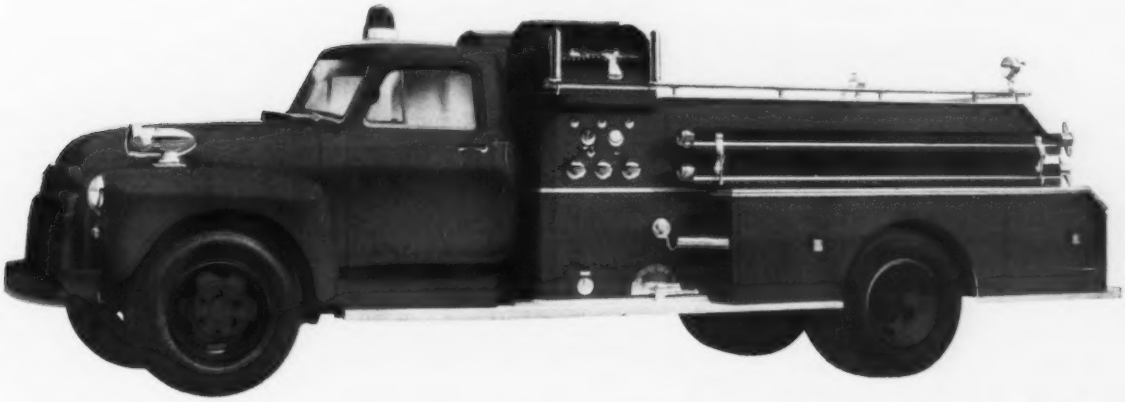
*Sources available upon request

BUT here is the last word in high-pressure fog fire fighting



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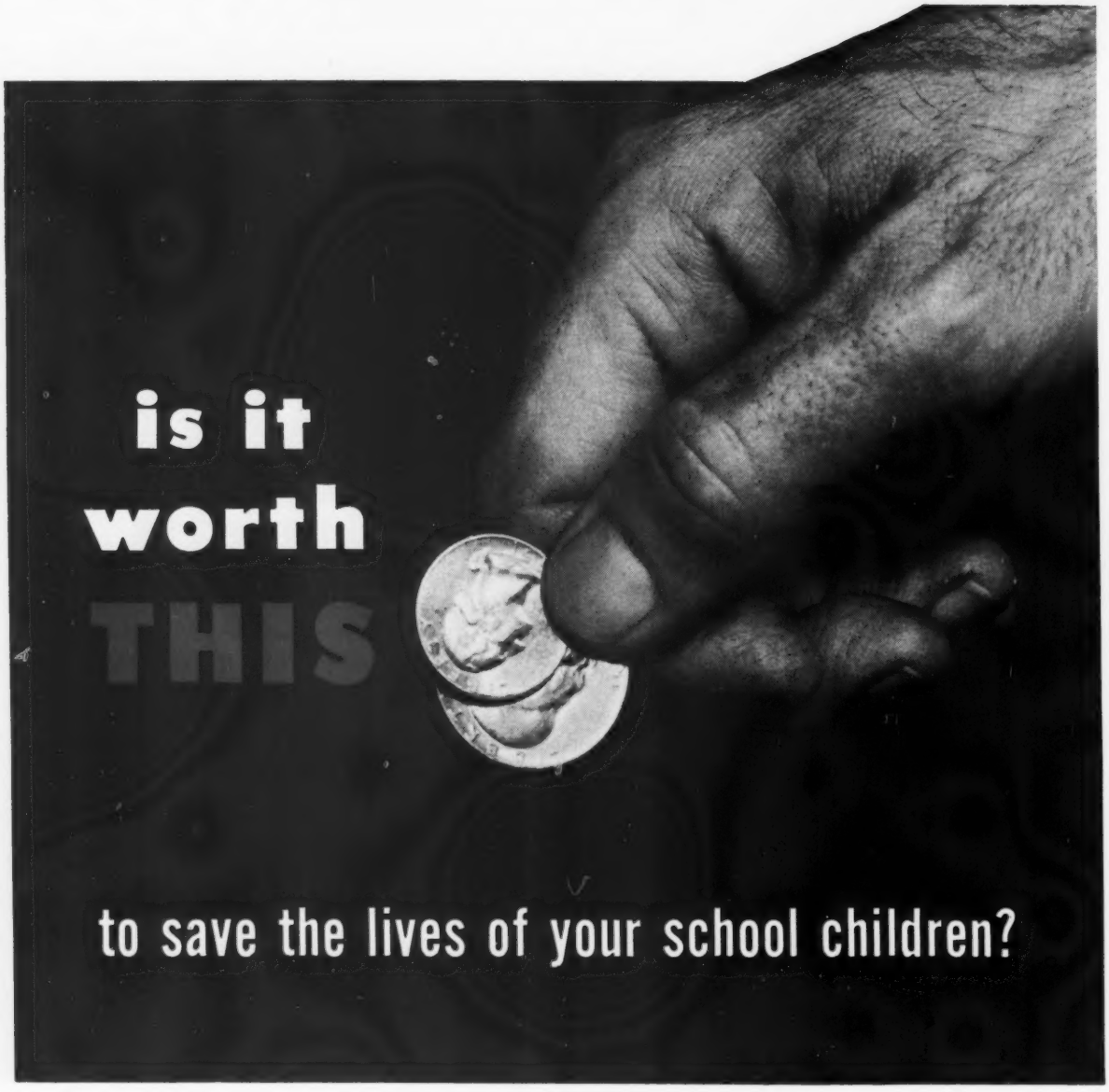

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Firemen

Volume 21 Number 1

WARREN Y. KIMBALL, EDITOR
PAUL R. LYONS, ASSOCIATE EDITOR
HENRY S. GERE, ADVERTISING MANAGER

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PERCY BUGBEE, GENERAL MANAGER
ROBERT S. MOULTON, TECHNICAL SECRETARY
HORATIO BOND, CHIEF ENGINEER
CHARLES S. MORGAN, ASSISTANT GENERAL MANAGER
GEORGE H. TRYON, III, ASSISTANT TECHNICAL SECRETARY
CHESTER I. BABCOCK, FIRE RECORD MANAGER

Contents for January 1954

	Page
"He Being Dead Yet Speaketh"	6
Nebraska Encourages Cistern Construction	7
Farm, Fires and Forethought, by Howard S. Russell	8
Civil Defense Developments in Canada	10
U. S. and Canadian Fire Officials	11
UL Testing Station in Ontario, Canada	11
Connecticut Chiefs Hold Disaster Institute	11
Pasay City, Philippines	11
Newsworthy Fires	12
An Industrial Fire Control Program that Works, by Irving S. Black	14
Making a Good Job of It, by Warren Y. Kimball	16
Ogontz Fire Company, Pennsylvania	18
You Need the Right Amount of Fog	19
Statewide Fire Council in New Jersey	20
11th Edition of NFPA Handbook	22
Conflagration at Pusan, Korea	22
Firemen Training in New York State 1952–1953	22
Membership Report	24
What's New in Fire Equipment	26
Fire Protection Year Book, 1954	26

Farm Fire

The cover picture, *Woonsocket Call* photo, shows a farm fire just over the Rhode Island state line in East Blackstone, Massachusetts. The fire occurred on November 18, 1953 and was attributed to an electric light in the hayloft. Flames are shown breaking through the roof of the hay barn as fire fighters from three communities try to save the milking shed with streams from ¾-inch booster hose. The milking shed, milking machinery and pasteurizers were heavily damaged. A favorable wind blew heat and flames away from a 360-ft. long cow barn attached to the burning hay barn. Fire fighters pumped from a brook and a forest fire water hole 1500 ft. away. Workmen led 180 cows from the smoke filled structure. A barn on the same site was destroyed by a fire caused by lightning in 1950. The latest fire caused an estimated $50,000 loss. This sort of fire points to the need for adequate pumper suction sources near large farm buildings not enjoying the protection of town fire hydrants. Country fires can be just as hot as city fires and adequate volumes of water should be available for fire fighting. Water tankers are helpful, especially in the initial attack upon farm fires, but where large buildings are involved, reliable suction sources are needed for fire pumpers.

Fire Hose

The only practical purpose of fire hose is to carry water under pressure from a supply source to a fire stream nozzle. It is about time that fire hose became known and rated for its water carrying capacity. The size coupling employed is merely a mechanical consideration. Different samples of hose of the same nominal coupling size are said to vary as much as 40 percent in ability to carry water as measured by the resistance or friction loss in the hose. A department can have the finest modern pumper and defeat its purpose by loading the hose body with cheap hose having high pressure loss characteristics. It has been reported that some apparatus has been delivered with a cheap extruded "booster" hose which in some places does not have ½-in. clear waterway. This may explain why some fog nozzles have not worked successfully on some booster lines. The hose could not supply the required volume and pressure.

One suggestion has been that specifications for first grade fire hose with any nominal coupling size should include a provision that friction loss should not exceed the underwriters published fire stream tables. These tables were written many years ago and based upon more recent experience may be considered a conservative requirement for ordinary good fire hose.

Another approach would be to specify the flow that is required at certain pressure losses per 100 ft. of hose. Permitted pressure losses with different sizes of hose at several flows might be approximately as follows:

GPM	2½-in. hose	2¾-in. hose (2½-in. couplings)	3-in. hose
200	10	6	4
250	15	9	6
300	20	13	8
350	—	17	11
400	—	22	14
450	—	27	17
500	—	—	20

After all it is ability to carry water that is wanted of hose, so why should hose not be known for its water carrying capacity just as much as for its bursting pressure, elongation, and twist. After all, few departments will ever operate the larger hose at pressures anywhere near the 600 psi bursting pressure advertised for many premium grades of hose, but at present they have no knowledge or assurance that the hose they buy will carry more or even as much water as standard 400 psi test hose.

Thinking about what hose is intended to do may lead to requests for certified data as to flow characteristics before purchase. This should cause the manufacturers to think in terms of the flow rating of hose. A good 2½-in. hose might be known as a 300 gpm hose at 20 psi pressure loss, a lower grade might flow 300 gpm at 25 lbs. pressure loss, a good 2¾-in. hose might carry 400 gpm hose at 20 lbs. pressure loss, and a good 3-in. hose might flow 500 gpm at 20 lbs. pressure loss per 100 ft.

"He Being Dead Yet Speaketh"

Hebrews 11:4

by John R. Freeman

You wouldn't fight an atomic war with this cannon but the size of hose you use now to fight big fires was described as being outdated, inefficient, and inadequate by John R. Freeman in 1889.

Sixty-five years ago the American Society of Civil Engineers first published "Experiments Relating to Hydraulics of Fire Streams" by John R. Freeman, who since has been accepted as the "father of fire service hydraulics." In one section of the report Mr. Freeman asks *"Shall the standard diameter for fire hose be increased?"*

He proceeds to answer this question in the following text, which is extracted from the above-mentioned publication. A thoughtful reading of this document may cause the reader to wonder why the fire service has ignored this simple means of improving the efficient use of water supplies, pumps, and fire nozzles suggested by Mr. Freeman.

SHALL THE STANDARD DIAMETER FOR FIRE HOSE BE INCREASED?

TO ILLUSTRATE the effect of diameter of hose upon the loss of pressure by friction the following table is presented. This is computed by the well established law that loss of pressure varies inversely as the fifth power of diameter:

For any definite number of gallons per minute flowing, the loss of pressure due friction per 100 feet of hose, whose diameter is	3 inches is only 40 per cent 2⅞ inches is only 50 per cent 2¾ inches is only 62 per cent 2⅝ inches is only 78 per cent	as much as in hose of the same smoothness, whose diameter is exactly 2½ inches.
	2⅜ inches is only 29 per cent 2¼ inches is only 70 per cent	more than in hose of the same smoothness, whose diameter is exactly 2½ inches.
	2⅛ inches is only 2. 2 inches is only 3.05	times as much as in 2½-inch hose.

This table is well worthy of study by makers of hose.

BY WAY of further illustrating the practical bearing of this question of diameter, we may say that if the Boston Woven Hose Company, for instance, should increase the diameter of hose like sample D (included in the experiments — Ed.) by 3/16 of an inch . . . the observed friction loss for each hundred feet of length would be 10 pounds instead of 14.5 pounds, or a saving of 31 percent of power now wasted.

May we also venture the suggestion that if some enterprising firemen, who earnestly desire the prize for distance playing at a firemen's muster, should have smooth hose manufactured with internal diameter of 2¾ inches instead of 2½, but fitted with the ordinary 2½-inch coupling, this difference in diameter, would, with the customary 250 feet of hose and a 1⅛-inch stream, make more difference in the distance reached than would any fancy nozzle; and, in comparison with hose of the same smoothness, 2½ inches in diameter, would, with the same pressure at engine, throw the extreme drops about 15 or 20 feet farther. With greater length of hose than 250 feet the difference would be very much more marked.

From strong practical reasons, this slightly increasing diameter of such brands of cotton rubber-lined hose now made exactly 2½ inches in diameter, is well worthy consideration, especially by the makers of woven hose. (In knit hose, solid rubber hose and leather hose, a somewhat increased size is at present attained by the natural expansion under pressure.)

The 2½-inch standard was first adopted years ago, before pumps or steam fire engines had attained their present perfection, delivery or capacity, and before the costly experience gained in large mill fires, as well as in the large fires of Portland, Chicago and Boston, had led to a general increase in size of streams thrown at serious fires.

In a well designed and first-class, modern, mill-hydrant system, lines of hose more than 250 feet in length will not generally be necessary. The friction loss in hose is thus in one aspect of less importance in such instances than in much of the work of a city fire department, where lines upward of 500 feet in length are often used.

Considering the needs of city departments, the writer believes it would be of much practical advantage for ordinary fire hose to be at least 2¾ inches diameter. This size hose should be fitted for the present, or until favorable experience fully proves the advantage of a general change, with a coupling of 2½ inches bore, so as to be perfectly interchangeable with hose in present use. Such a hose would, with the same pressure at hydrant or steamer, give a stream at the end of 1,000 feet of hose, equally large and strong as would be thrown at the end of a line about 650 feet long of 2½ inches diameter.

The only objections to its use are, first, the increased weight to handle.* This cannot be considered insurmountable, in view of the fact that much knit hose now in use is, when expanded by pressure, of nearly this size, and is handled without difficulty. Moreover, a length or two of light unjacketed 2½-inch hose could be used next nozzle for inside work or work on ladders.

The second objection is the reduced bursting strength due the larger diameter. This, with the fabric remaining just the same, would amount to only 10 percent, and any fabric now standing 500 pounds on 2½ inches diameter would stand 450 pounds on the 2¾ inches diameter. In fact, the best 2½-inch jacket fabrics of today are plenty strong enough to stand a 3-inch diameter. It may be best not to be content with the 2¾-inch diameter, but to go far enough while we are about it and adopt a 3-inch diameter as the standard for fire hose.

While the matter is in a tentative state I would advise using 3-inch hose on the coupling of 2½ inches bore, in order that it might fit ordinary hydrants and engines and be perfectly interchangeable with the old standard hose. The couplings should, however, be designed and made with care, avoiding a square shoulder where diameter is reduced from 3 to 2½, and making this reduction or enlargement in every case by a long, easy, round cornered taper. If the reduction of diameter is made in this manner, the loss by using the 2½-inch interchangeable coupling will be much less than would at first thought be expected, and the loss of pressure by such a coupling at each fifty feet would be less than 5 percent of the pressure saved by the larger size of hose.

*This objection has been effectively removed by recent introduction of fire hose jackets made with synthetic fibres. — Ed.

Nebraska Encourages Cistern Construction

Based upon a report by Harold J. Requartte, President, Farmers Mutual Insurance Company of Nebraska

ONE of the most important fundamentals of farm fire protection is to make certain that adequate water supply is available. As has been reported in FIREMEN magazine, some fire protection districts and fire departments have solved this problem by encouraging farm property owners to build cisterns in desirable locations for protection of dwellings, barns and other buildings.

To stimulate such construction in the State of Nebraska, fire districts are using a set of demountable forms for constructing 3500-gallon concrete cisterns. The program through which these forms are supplied has been developed by the Farmers Mutual Insurance Company of Nebraska; the Agricultural Engineering Department of the University of Nebraska; the Portland Cement Association, and Nebraska State Fire Marshal E. C. Iverson.

At present sets of the demountable forms are being used experimentally. Two pilot demonstrations of constructing the cisterns have been conducted; one near the Town of Schuyler and one near Milford, Nebraska.

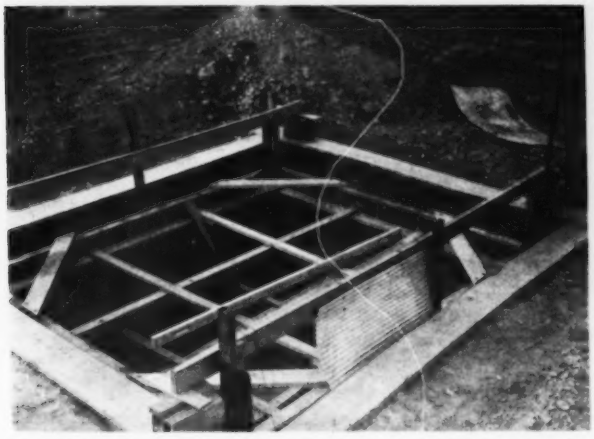
As illustrated in the pictures on this page, a hole is dug in the ground and the wooden form is suspended. Mesh steel and reinforcing bars are placed around the outside of the wooden form and mesh is also placed on the bottom of the hole.

Construction and removal are facilitated by having the sections bolted together. Interior walls of the form are made of "Plyform," a waterproof plywood. Two riser pipes are cast into the sections of the slab cover; one for suction hose while the other contains a float to indicate the amount of water remaining in the cistern.

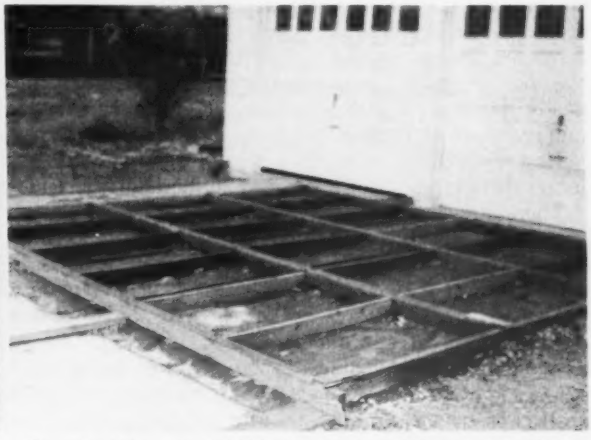
It is planned to have all fire protection districts in the State of Nebraska build sets of the forms and loan them to member departments within the district. It is anticipated that each set of forms may be used nearly one hundred times. Cost of each form is estimated at $280, while cost of the cement and steel needed to complete a cistern is estimated at $175, plus the cost of making the excavation.

Construction of a cistern near Milford, Nebraska. Workers are troweling concrete along the edge of one wall and on the floor of the cistern. Earth is used as outer retaining wall for the concrete.

Here is one of the forms for casting the cistern joists. At left corner of the photo may be seen a form for one of the pipe risers which are cast into the slab cover for drafting and to indicate water level.



Forms in place for pouring of concrete. Note plywood construction of inner form walls. Concrete poured into the form will join at the bottom to form a watertight monolithic cistern.



Form for slab cover of 3500-gallon cistern. Cisterns are located on farm properties so that they may afford protection to all buildings, yet suction openings are far enough away from any one building to permit access in case of fire.

"Farms, Fires and Forethought"

By Howard S. Russell, Manager, Mutual Farm Underwriters, Waltham, Massachusetts, and Member, NFPA Committee on Farm Fire Protection. From an address given at the NFPA Regional Meeting in Providence, Rhode Island, October 29-30.

DR. JOHN D. BLACK, the famous Harvard economist seems to think that New England farming is a pretty big item when compared with farming in other parts of the country. He says there are more farms with at least $20,000 a year production in New England than anywhere else in the United States in proportion to the area. The Boston Federal Reserve Bank in a recent bulletin estimated the agricultural production of New England at around $775,000,000. Moreover, they named county after county that, agriculturally, stood at or near the top compared with all counties of the United States.

Robert P. Holdsworth, head of the Department of Forestry at the University of Massachusetts, stated in a recent bulletin that New England has a greater proportion of forested area than any other part of the country. "This is also a young forest," he says, "which holds great potentialities for the future, as other sections cut their last virgin timber and erosion takes its steady toll."

Our fire fighters are concerned with the forest as with the farms. They are also concerned with the 411,000 New England people who live on farms.

For thirty years one of my important duties has been the prevention and control of fire on New England farms and in New England woodlands, chiefly in Massachusetts, later in Rhode Island. Every farm fire means not only loss to the farmer himself, usually only partly insured, but to the community, state and region.

How do you go about stopping farm fires?

There are just two ways: prevent them from starting, and if they start, try to control them.

THE PRINCIPAL causes of farm fires are five: lightning; defective chimneys and flues; spontaneous ignition; defective electrical apparatus; and matches and smoking.

We know that lightning can be controlled through metal conductors; that chimneys can be built so as to be safe and so that they can be properly cleaned. We know that smokepipes can be kept away from woodwork, that spontaneous ignition in hay can be prevented by proper drying; that it is possible to install electric wiring and equipment so as to be reliable, and that careless smoking can be controlled both by self discipline and by discipline of employees.

Through a generation and a half we have poured fire prevention material into the regional farm magazines, the daily and weekly papers, and radio. All public agencies in the state have helped in the campaign: the Department of Agriculture and its successive commissioners; the Extension Service of the University and the Extension staffs in all the counties; the editors of farm papers; the Farm Bureau and other farm organizations.

THIRTY years ago comparatively few people believed that there was any such thing as a spontaneous fire in hay. Mysterious fires were generally attributed to cigarettes or wiring, even though the Roman agricultural authorities, Cato and Varro describe spontaneous heating in hay in their writings two thousand years ago.

We gathered information from every source available, from the writings of Professor Laupper of Switzerland; from the records of the Pennsylvania State Police which has made a thorough study of spontaneous barn fires in Pennsylvania; from the detailed observations of our own insurance inspectors who inquired into every fire of curious origin. Through the years we have been fortunate not only in finding barns with disintegrated hay ash at the bottom of the mows, which had failed to burst into flames, but we have obtained actual photographs of heated hay catching fire after being taken from barns into the open air with its available oxygen. The United States Department of Agriculture bolstered our observations from its Beltsville station in Maryland by securing photographs in connection with experiments on a partly burned hay mass in a Maryland barn and issued a bulletin with photographs, in cooperation with the N.F.P.A.

As such information became gradually available, we have emphasized the subject by every means of publicity at our command to farmers and to fire fighters. Now, as a result, farmers everywhere have accepted spontaneous ignition as a major cause of barn fires.

Fire fighters have developed effective means of controlling hay fires, if called in time. We have had a number of notable instances where a fire department, called by a farmer whose hay was heating, has wet the glowing edges of the combustion cone in the hay, hour after hour, sometimes needing gas masks, while the hay was being removed; and have saved the building. In the town of West Brookfield, Mass., two years ago, a great hay and stock barn and a hundred head of cattle were saved, with only $1,500 loss to the barn. (See FIREMEN for July 1952, page 17.)

Last year the mutual insurance organization with which I am connected started the systematic use of CO_2 or "dry ice" to control hay heating. Beginning with an experiment initiated ten years ago, but laid aside during the war, our group of insurance companies has now furnished apparatus to six stations of the state forest fire service of Massachusetts, by means of which CO_2 can be injected into a hot hay mow anywhere in Massachusetts within an hour after the farmer has called the nearest forest fire tower.

A CO_2 injection will reduce the temperature of the hay mow to freezing point within a matter of minutes. Then the hay can be taken out and properly dried or discarded as appears best. (See FIREMEN for August 1953, page 7.)

On such matters as these the county agricultural agents have been kept fully informed; in some Massachusetts counties they have conducted farm fire prevention campaigns of their own with special meetings for farmers. Such methods

have cut substantially the number of fires and also their seriousness on farms in Massachusetts from the total of ten, twenty or thirty years ago.

WE WOULD not give our work too much credit if it were not for an additional factor. This is that the yearly monetary loss to our companies, even with the great increases in values of buildings, stock and machinery, is also less in dollars than thirty years ago. The fact that the farm fire loss is lower indicates not only that we have been preventing fires by such means as I have described, and by the regular inspection of our insurance companies, but that the public fire protection available for farms has been steadily improving.

Farm fires now seldom reach the sweeping proportions that they did formerly. In fact if a whole farmstead is destroyed we wonder what was wrong with the fire department.

The fire departments' training and techniques are amazingly improved in the smaller places all over New England.

More recently the water protection for farms and country villages has been improving by leaps and bounds. Some years ago in Massachusetts we formed a committee called the Massachusetts Committee on Fire Fighting in the Country. Insurance companies, stock and mutual, the Fire Chief's Club, the state authorities, the Fire Marshal, the farm groups and the N.F.P.A. all participated. Our first effort was to hold a winter conference for fire fighters at Worcester in connection with the Union Agricultural Meetings. Every January since that time a similar conference has been held, attended by two to three hundred fire chiefs and forest fire wardens, always with a stimulating program which the fire chiefs have seemed to appreciate.

The committee which called that first conference took up the matter of better training and education for small town fire departments. In cooperation with the Massachusetts Fire Chiefs' Club, training schools were set up under the State Department of Education. In numerous specific instances training received in these schools has helped the fire departments to hold to small proportions losses that might have been large, not only on farms but other types of property. The morale of the small departments has improved immeasurably.

Foresighted farm owners in Royalston, Massachusetts, were able to save their dairy and hay barn last year when fire in a poultry building seriously exposed the barn as well as dwellings in the vicinity. Fire fighters from adjoining towns responded on mutual aid assignments and were able to save the exposed buildings. This waterhole was built in 1950 at a cost of $300 and furnished all the water needed by fire fighters for six hours.

WHEN the P. W. A. relief program started in 1932, our committee, working with the Commissioner of Agriculture, set up a program to provide waterholes in areas of the state where there were no hydrants. Several hundred waterholes were built at that time. Later certain individual towns took up the project. In recent years, the availability of the Soil Conservation Service with its engineers, technicians, and heavy machinery coupled with the need for irrigation, has brought about a great increase in the number of farm ponds. Particular attention has been given from the first, in Massachusetts, to the availability of these ponds for fire protection.

A certain farming town in central Massachusetts has always had a bad fire record. The insurance companies were considering withdrawal from that town. I outlined the situation to friends of mine in the town and was invited to speak at their town meeting. With the backing of some of the leaders, this town made an appropriation of $1,000 for a waterhole program and set up a committee to carry it out. Real results followed. Three large waterholes were built with the engineering advice of the Soil Conservation Service. One protects the church, the store, the town hall and the school, and the others each protect several farmsteads. With our help and encouragement they also worked out a system under which fire departments of three adjoining towns furnish them protection; this town being too small, and the properties too scattered to operate a department of its own.

SO, I WOULD recommend to you who are interested in country and farm fire protection and fire prevention in any of the New England states, get a program of prevention education going. Secure the cooperation of every possible public and private agency including the State Extension Service, the State Farm Bureau and Grange, newspapers, radio and television, not forgetting the fire chiefs, forest service, insurance companies, stock and mutual, which operate in your area and the N.F.P.A.

With all these forces working together, interest will be created to the point where town meetings and city councils will be more ready to vote money for fire apparatus and for water for rural protection.

Where the will and the spirit of cooperation exist, the task can be lightened, the methods made more effective, and both prevention and protection work can show results.

We have been at it thirty years in rural Massachusetts, and we "ain't done yet." Are you willing to put in thirty years?

Reprinted from FIREMEN

Fighting Rural Fires
(An Operational and Training Outline)
NFPA No. F20-2, 4 pp., 25 cents

Rural Fire Department Inspections
(A training Outline)
NFPA No. F21-1, 2 pp., 25 cents

Civil Defense Developments in Canada

AS REPORTED in the analysis of state and provincial firemen's training in the November, 1953, FIREMEN, fire service training in seven of the ten Canadian Provinces includes extensive Civil Defense operations and training. A recent address by Ontario Fire Marshal W. J. Scott at a Fire Chiefs Workshop Conference, in November, at the USFCDA Staff College, Olney, Maryland, provides further information on these activities in the Dominion.

The existing program for such operations is based upon recommendations developed at a series of Canadian Federal Fire Forums held in Ontario in 1952 under the direction of Major General F. F. Worthington, Canadian Civil Defense Co-ordinator. Co-chairmen for the forums were Fire Marshal Scott and Deputy CD Co-ordinator J. C. Jefferson. Three 5-day meetings were held and participated in by all of the provincial fire marshals and fire chiefs of the larger cities. U. S. fire chiefs and representatives of the U. S. Federal Civil Defense Administration also participated.

Purpose of the Fire Forums was to study the problems of Canadian Civil Defense operations against fire and to recommend solutions for practical application to existing conditions. One study was undertaken with the assumption that the City of Hamilton, Ontario (population 200,000), was subject to an explosion of an atomic bomb at a height of 2,000 feet. An analysis was made of structural characteristics of buildings in the city. A survey of the vulnerability of the area indicated that a 120-kiloton bomb would cause total destruction within a radius of 4,000 feet from ground zero. Conclusions were that there would be few fires in this area but a perimeter area some 3,000 feet in depth, or out to a radius of 7,000 feet, would be heavily involved in primary fires. Beyond that to a radius of 10,000 feet from ground zero would be scattered primary and secondary fires. The survey estimated that 1,550 separate continuing fires would result.

For fire fighting it was estimated that 700 fire pumpers of 750 gpm (U.S.) capacity would be needed to cope with such a situation and would utilize 240,000 gpm of water.

Planning for fire fighting was based upon the coordination of existing municipal fire departments under county fire control. Manpower and equipment necessary was estimated at five times the present amount in existing fire departments.

The following policy recommendations resulted from the Fire Forums:

Organization

It was recommended that the fire services form an integral part of Civil Defense and in emergencies should operate under a CD director who would decide *what* was to be done. The command decision of *how* it was to be done and what utilization of equipment and manpower was to be made would be left to the senior fire officer of the city or area affected by the emergency. For example, if Hamilton was affected by large scale fire disaster, necessitating mutual aid response from surrounding towns and city, operational command for coordinating all the fire departments would be assumed by the Hamilton Fire Chief or senior surviving officer. This operational plan is now in effect in many areas throughout the Dominion.

Apparatus

For training volunteer and auxiliary fire fighters the Canadian Government purchased 40 fire department pumpers of 600 gpm (U.S.), Class B type. All of these pumpers have a fully-enclosed cab capable of seating 6 fire fighters. A second allotment of 10 pumpers of 1,000 gpm (U.S.) capacity has been ordered.

Hose Thread Standardization

Following the example of Nova Scotia and Ontario, four other provinces are standardizing hose threads in all municipal fire fighting equipment, hydrants, and industrial equipment. It is estimated that 90 percent of Canadian fire fighting equipment will soon be standardized with provincial standard hose threads. Adapters are being supplied so that Canadian fire departments can operate with U. S. fire departments near the border. In the standardization program the Canadian Federal Government assumes one-third of the costs while the Provincial Governments assumes the other two-thirds.

Recruiting

Recommendations from the Fire Forums were that all recruited volunteers and auxiliaries be protected under the provincial workmen's compensation program with the compensation costs shared equally by the Federal Government and the Provinces.

Training

Training for the CD fire services has been standardized throughout Canada. As stated in the November, 1953, FIREMEN, itinerant instructors travel through the Provinces with mobile units to provide training to fire departments in out-lying towns. The Civil Defense Edition of the Oklahoma A&M Fire Training Manual is used as a basis for instructing volunteers and auxiliaries under the CD program.

Communications

A standard short wave radio procedure was agreed upon during the Fire Forums. This was published in a manual issued by the Ontario Fire Marshal's Office. Orders are pending for radio on all CD pumpers, while progress is being made in extending the use of radio in municipal fire departments.

Water

It is estimated that four million gallons of water would be needed to handle fire from atomic attack in a square mile of congested urban areas. The National Research Council is now testing 6-in. plastic and aluminum piping and 4-in. steel pipes, all light weight and with quick-action couplings. Canadian planning envisages the use of large-size water reservoirs and extensive use of emergency water mains and special large pumps.

Atomic Warfare Fire Defense

Major cities in Canada have been surveyed and studies have been made of urban building characteristics, and planning for Civil Defense is made with an accurate knowledge of existing conditions. A textbook on radiological defense is planned for the fire training program.

U. S. and Canadian Fire Officials

THE Workshop Fire Conference at the National Civil Defense Training Center, Olney, Maryland, November 18–20, 1953, brought together U. S. and Canadian fire and civil defense officials. Kyle P. Laughlin (at map), Director, Fire Division, United States Federal Civil Defense Administration, presided.

In the group with him are, back row, left to right: Lt. Col. Lewis O. Goas, Office of U. S. Secretary of Defense; Frank P. McNea, Fire Operations Officer, USFCDA; C. L. Smith, Chief Training Officer, Canadian Federal Civil Defense; Col. Barnet W. Beers, Assistant for Civil Defense, Office of U. S. Secretary for Defense; Col. M. P. Cawdron, Canadian Federal Civil Defense; Nicholas A. Odom, Fire Apparatus Officer, USFCDA; Judson D. Blakslee, Fire Training Officer, USFCDA; Horatio Bond, U. S. Fire Advisory Committee; and W. J. Scott, Provincial Fire Marshal, Ontario.

Seated, left to right: Fred Shepperd, U. S. Fire Advisory Committee; R. E. Vernor, U. S. Fire Advisory Committee; Milton O. Howle, Public Safety Officer, USFCDA; Brigadier J. C. Jefferson, Canadian Federal Deputy Civil Defense Coordinator; and Chief Henry G. Thomas, U. S. Fire Advisory Committee.

UL Testing Station in Ontario, Canada

W. E. Baldwin, Honorary President, Underwriters' Laboratories of Canada, turns the first sod for the new Head Office and Testing Station being built by the Laboratories at the Scarborough, Ontario site. Pictured from left to right are: Alex S. Hamilton, G. C. Hunter, A. Leslie Hamm, J. E. Haskins, Roy B. Whitehead, W. E. Baldwin, R. L. Young, N. G. Bethune, E. F. Tabisz, and L. L. Lewis.

Connecticut Chiefs Hold Disaster Institute

IN DECEMBER, fire chiefs of the principal cities in Connecticut got together at the University of Connecticut for a three-day institute devoted to disaster planning. General phases of fire defense plans on a statewide basis were considered and analyzed in the light of a specific problem involving a nominal A-bomb attack on the Capitol City of Hartford. Colonel Lawrence W. Eddy, Supervisor of Service Training for the Connecticut State Department of Education, arranged the conference with General William Hesketh, Director, Connecticut Civil Defense, and Chief Henry J. Thomas of Hartford, who is also President of the International Fire Chiefs Association and a director of the NFPA.

The application of defense plans to a specific A-bomb disaster established a number of important points.

(*a*) The most important method of reducing the number of fires in an A-bomb attack is to reduce the number of cases of ignition of combustible materials due to the primary heat radiated by the fire ball. This can be accomplished by keeping the city clean, a fact which supports the importance of fire department fire prevention work.

(*b*) A further substantial reduction of the number of fires requiring fire department attention can be obtained through a program to encourage a large number of citizens to learn how to do first aid fire fighting operations, using simple tools such as water pails, pump tanks and stirrup pumps. The discussion brought out the importance of organizing first aid fire fighting teams not only for this purpose but to provide responsible people at key points in the city (large buildings, for example), from whom the fire department could receive reports properly evaluating fire situations in a disaster.

(*c*) The importance of effective plans of mobilizing fire companies and the difficulties involved in moving any very large number of fire companies except within immediate metropolitan areas.

Pasay City, Philippines

CHIEF Jose Hernandez of the Pasay City Fire Department (NFPA member department), Republic of the Philippines, forwarded to FIREMEN this picture of a training session at a Pasay City fire station. Studying the equipment are members of the fire brigade of the Philippine Air Force who participate in firemen's training sessions directed by fire officers of Chief Hernandez' Department.

Newsworthy Fires

Stockyards Blaze

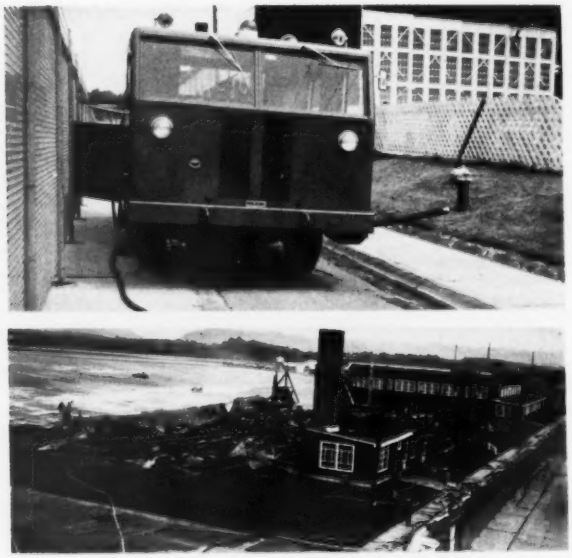
Fire fighters of Springfield, Missouri, had their hands full on November 23, 1953 when flames from undetermined cause cut a 100-ft. wide swath through the Union Stockyards, ruining two cattle pen areas and putting three cattle scales out of service. Two hundred tons of hay and 200 head of cattle were lost in the flames. Favorable wind helped fire fighters save the exchange building and fuel tanks. While city fire companies from five stations fought the fire, one engine company and one squad responded to six other calls, several of which involved working fires. Brands from the stockyards fire started several grass fires and ignited several roofs. Householders and police manned garden hose to safeguard exposed property. The loss was estimated at $350,000. *United Press photo.*

Plywood Storage

Baltimore firemen had a bout with this 6-alarm fire in a storage warehouse filled with plywood on Friday the 13th of last November. The 180-ft. long brick warehouse with wood joisted roof was fully involved when the first company arrived. There were no subdivisions to restrict the spread of the fire and no automatic sprinklers. Plenty of water was available and the department went to work with 23 big lines to knock down the fire according to Chief Michael H. Lotz. *Baltimore News Post photo.*

Lacquer Factory

The Philadelphia fire department again made good use of its "Special Service Unit 100" when sparks from mixing machinery ignited lacquer fumes causing an explosion and fire in this lacquer paint factory on November 10. Despite the hazards of the occupancy, no automatic sprinklers were provided and 26 fire companies used 31 hose lines including five 3½-in. lines from high pressure mains. Deputy Chief George L. Churchill reports that the explosion caused tanks and drums to rupture sending flammable liquids into the yard and street. This outside fire was quickly handled by dry chemicals carried on all apparatus and the SS-100 unit. As soon as the building could be entered, open tank and vat fires were quickly extinguished with 1½-in. foam lines from the SS-100 truck backed up by a tender with additional foam, wet-water, and dry chemical. *United Press photo.*



Security for the Fire

Three months before a midnight fire destroyed an aircraft hanger at Stewart Air Force Base at Newburgh, N. Y., on October 7, a fire prevention officer had the upper photo taken to illustrate his recommendation that the security fence shown be removed so that the pumper could get to the hydrant. When the fire occurred, the operator of the 750 gpm pumper tried unsuccessfully to cut through the fence before crashing it down with the pumper. By that time it was too late to control the fire. Despite help from nearby communities, $620,000 loss resulted. During the previous day, three small fires had started in the same building from welding sparks which ignited a very light fibre board insulation. However, due to inadequate watch service the big fire was through the roof when discovered from a distance. *U. S. A. F. photos.*

Millions of Gallons of Gasoline are here protected against fire by a Rockwood Double-Barrelled FOAM Chamber.

Jet action for a fire

The cylindrical objects at the top of the gas tanks in the picture above are Rockwood Double-Barrelled FOAM Maker Chambers — protecting millions of gallons of gasoline.

Should fire occur, the FOAM-Making Chambers would quickly control it, thus preventing any rupture of the tanks and the resultant spill fire. Such a fire could endanger the industrial area along the river 25 yards away and the entire river traffic, much of which is strategic material, hauled by river boats.

Due to a special jet action, the manually controlled Rockwood Double-Barrelled FOAM Maker Chamber puts a smothering FOAM blanket *swiftly* over flames, controlling and extinguishing the fire. Internal impinging jets discharge into two concentric barrels, one within the other, dynamically mixing air, water and FOAM liquid into a finer bubble structure than ordinarily possible. This construction is a patented one and typical of the many ways in which Rockwood engineers water to cut fire losses.

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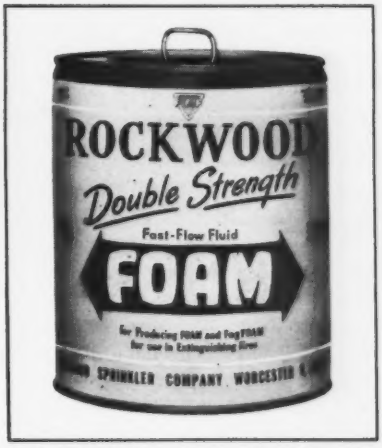

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An Industrial Fire Control Program That Works!

By Irving "Sam" Black, Sr., Plant and Protection Supervisor, United States Rubber Company, Providence, Rhode Island. From an address given at the NFPA Regional Meeting in Providence, Rhode Island, October 29–30.

THE United States Rubber Company plant, located on Valley Street just north of Providence, covers 23½ acres and is spread along the Woonasquatucket River for about one-half mile. There are 39 buildings of old and new type construction. About 98 percent of these buildings are protected with automatic sprinklers with good water pressure.

In this plant, we employ approximately 3,000 people who work in 98 different manufacturing and functional departments making 3,000 separate articles such as golf balls, war products, battery separators, mechanical goods, dipped goods, Lactron fabric, sundries, and some plastics. The fire hazards are not easy to control due to the complexity of operations. Each product offers a different fire protection problem.

We have many jobs which require flammable solvents and cements. Most of these solvents have a low flash point. Some are high-test gasolines, solvent naphtha, Amsco A., Solvasol, MEK, MIK, acetone, toluol, hexene, several different kinds of alcohol, and some carbon disulfide. We have to be very strict in our rules on handling these solvents and have a written standard called "The Control of Solvents" that is taught and practiced throughout the plant.

We also have a dust control program for the manufacturing and mechanical departments. This instruction includes proper handling of ground rubber dust, cornstarch, cake flour, and many other dust lubricants. We know these dusts will explode or catch fire and must be handled carefully. We extinguish any fires in the rubber grindings by applying wet water.

U. S. Rubber Company employees receiving instruction in use of CO_2 extinguisher. "Sam" Black, Plant and Protection Supervisor, is at left. At right in old-time volunteer fireman's costume is "Mr. Plantsaver" who helps to promote fire prevention practices throughout the Company and who was also prominent during NFPA Regional Meeting.

BACK in 1935, we developed a fire control plan. We had two running fire brigades, one on each side of our plant. When fire started, it was difficult to be sure a certain group of men would be in that area. After a man had traveled say a quarter of a mile on foot, he was in no condition to fight fire. We then decided to have a fire crew in each of the highly hazardous areas such as the cement house, spreader room, making rooms, and textile mill.

When war days came along in 1942 we added air raid wardens and monitors to our fire control plan. After the war, we continued the same plan and called the air raid wardens "floor captains" and kept the monitors and fire fighters. We then had the watchmen check 25 different plant protection items on each watching round and make written reports. This plant protection daily report went a long way in keeping our fire doors, sprinkler systems, exposed solvents, and defective equipment in good, safe condition. Also, two members of management inspect each department bi-monthly, rating each department on a point basis. Fire protection, solvent control, housekeeping, and safety are the main items. Hazards are usually corrected immediately. Every foreman and supervisor enjoys a high rating and works toward that goal.

THE fire control plan and evacuation system is only as good as the effort that is put into it. First, we issue a written standard practice called "The Fire Plan" which makes each superintendent, foreman, and supervisor responsible for appointing a floor captain, monitor, and fire fighters. They fill out a fire plan card, listing each operator, the shift, location, and fire exits. This group is then instructed by the supervisors and plant protection personnel on the fire control program. They in turn instruct the other employees of procedures to follow in case of fire, accident, or drill. The fire fighters are then instructed in the use of all kinds of fire extinguishers and shown the hazards that exist in their department and surrounding areas.

Providence Fire Department conducting a demonstration outside of a U. S. Rubber building.

In a drill during Fire Prevention Week, we evacuated our office building of some 260 people in less than 2½ minutes, and a manufacturing department of 118 people in just 37 seconds. The production loss for the required 2 minutes was very low. After the drill fire fighters were given practical instruction in the use of soda and acid, foam, chemical, and CO_2 fire extinguishers. We have two scheduled drills each year.

We also give fire fighting instructions to employees on any job where there are serious hazards. Men and women alike are trained in the use of CO_2 extinguishers. We also ask the people to make suggestions and give us their ideas on some of the hazards. Supervisors and foremen are also given a training course in fire hazards, fire fighting, solvent control, and the duties of plant protec-

tion. This course has always been very popular and well attended and many practical suggestions have comes from this group.

We have a very strict welding program. Each of our welders is trained by the Plant Protection Supervisor on hazards, fire control, and proper methods. No welding job can be done without a permit signed by the shop foreman. The welder is authorized to work after investigation of condition by the Plant Protection Department.

IN OUR hiring of new employees we have an orientation program which gives them a general overall picture of conditions at our plant. They are instructed in the use of fire extinguishers and safety equipment before they start to work. This gives them a good background. The results of this training are in the fire record. This year, we have had 6 fires to date and the highest cost has been $7.50. This was for the cost of recharging the extinguishers. We had a fire last Spring when a young lady came in at 7:00 A.M. on a cold crisp morning and when she started to work she touched her hand to a swab on a small tilt-top safety can. A static spark started the can and swab to burn, she dropped the swab on the floor and then there were two fires burning. Both of these fires were extinguished immediately, the one on the floor by a male fire fighter and the one on the bench by a woman fire fighter who had a 5-lb. CO_2 extinguisher and told everyone to get out of the way the fire department was moving in. It is this kind of action that has made our fire control plan work.

It takes a lot more than training and practice to keep a fire control plan in efficient operating condition. In Providence, we have received the finest cooperation from our top management in the local office and from our New York office. The Labor Union has been very cooperative and friendly in connection with our fire control ideas.

The attitude of the employees participating in our program willingly and freely with their time and ideas has gone a long way to our success.

In Providence, we have had a very happy and successful fire control program and we work hard daily to keep it that way.

Chief F. R. DIMOND
OF HUTCHINSON, KANSAS

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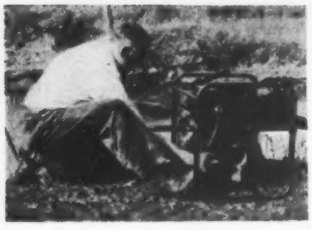

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FIRE PUMPS IN ALL STANDARD CAPACITIES

Making a Good Job of It

by Warren Y. Kimball

Aide to the Chief

ONE target for economy minded municipal administrators is the aides for a chief officer. Without investigating the duties and responsibilities of chiefs' aides, it is reasoned that other high ranking municipal officials lack "chauffeurs" so why provide drivers for chief fire officers. It is not appreciated that the properly selected and qualified aide is second only to the chief in importance on the fireground and that in effect the aide doubles his chief officers' effectiveness. Fire fighting is an emergency operation in which fire companies and special duty units must be assigned to the most effective operating positions in the matter of seconds. The aide, knowing the intent of his chief, serves as his executive in assigning companies to positions as they arrive at the fire. The aide, regardless of rank, exercises the authority of his chief. This is important at working fires because the fire must be attacked from several vantage points simultaneously. The chief cannot be at every point at once, but his aide can represent him at the opposite side of the fire as required.

Another point, frequently overlooked, is that all other fire fighters are assigned to crews of engine, truck, or squad companies. They can be detailed for special duties at a fire only at the expense of weakening their companies or spoiling effective teamwork in handling hose and ladders. The aide to the chief is an experienced fire fighter who can fill in for numerous special assignments. Arriving with the chief, frequently ahead of the apparatus, aides have assisted in numerous rescues. The carefully selected aide is also the secretary to the battalion or division command to which he is assigned. He is the communications officer at every fire, handling communications between the fire-ground commander and fire-alarm headquarters by radio, fire-alarm telegraph and telephone. All calls for additional or special equipment are handled by the chiefs' aide. The chief officer who has to stop his com-

mand functions at a critical moment to place calls for additional help is in a sorry situation indeed. Such a situation can quickly result in a much greater fire requiring many more companies of firemen as compared with the single aide whose job is under attack.

Then, too, it is the duty of the aide to take care of the chief's car and the numerous pieces of special equipment and even special records carried therein. Non-firefighters in administration seldom realize that the chiefs' car is a district "squad" car carrying hundreds of dollars worth of special items. The time and energy of a busy chief should not be spent in maintaining car and equipment. Fire fighters are trained to place their lives under the orders of their chiefs. If they see the chief is pre-occupied with non-command duties, they will know that he has less time and energy to develop and exercise command talents and functions.

Lastly, the job of driving the chief's car, and emergency vehicle, through traffic to a fire is not safely a one man function with siren, and radio to handle in addition to precision driving needed in bucking the traffic in haste. Last year one of the outstanding fire chiefs on the West Coast lost his life driving to a big fire after his commissioners had deprived him of the service of an aide. A fire service specialist familiar with the situation had this to say: "The loss of Chief —— was a hard blow for the department and this whole area in general. I feel that by having previously denied operators (aides) to the fire officers, the supervisors have directly contributed to the loss of their best man; because it is quite unreasonable to expect of any man that he should simultaneously drive his car under siren, handle the sending and receiving of radio messages, and formulate his strategy on the way to a major fire."

So Mr. Economy Axe, if you must start your cuts with the municipal department dedicated to the protection of life and property, cut out a fire company so the community can see the reduction you have made in their safety service. Such a cut will be less damaging to the efficiency of your fire service than eliminating the aides to chief officers upon whom proper command and control functions so largely depend.

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SINCE 1836

Ogontz Fire Company, Cheltenham Township, Pennsylvania

By Raymond W. Wall, Jr.

THE Ogontz Fire Company completed the celebration of its 60 years of service to Cheltenham Township with the dedication of its new $36,000 building, in May, 1953. It was the first new firehouse to be built in the township in 26 years.

The building, designed by Ralph Caldwell of Rushland, Pa., and built by Helwig Brothers, houses two fire trucks and has room for a third. Behind the apparatus room is a large meeting room, kitchen and a small social room. Since the building is also used for the local elections, a side entrance is provided, so the voters won't have to go through the apparatus room.

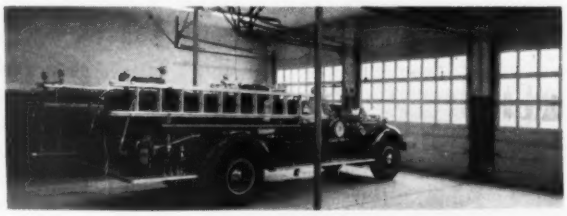
With four other volunteer fire companies, the Ogontz Company protects Cheltenham Township, an area in Montgomery county, covering 9.6 suqare miles, just north of Philadelphia. The township has an estimated population of 28,000 and about $38,455,000 worth of taxable property.

The fire company's equipment consists of two Mack trucks with 750 gpm triple combination pumps, 1-in. booster hose lines and reels, 1½-in. and 2½-in. hose lines, "Indian" back-pack pumps and hand chemical extinguishers. Both trucks have F.M. mobile radio units.

The smaller Mack-75, which was delivered in January, 1953, is used as a "booster" truck. It carries a 300-gallon tank and emergency flood lights. The larger Mack-85 has been in service since 1950, has a 200-gallon tank and carries extra equipment such as hats, coats and boots.

The Ogontz Fire Company has about 100 members, 40 of them now active. The township fire marshal, William N. Gottschalk is President and his brother, Richard, is Chief. The company has an active Ladies Auxiliary, which is planning its 30th anniversary celebration in 1954.

Besides being a member of the NFPA, the company is an active and charter member of the Montgomery County Firemen's Association and the Montgomery County Fire Communication Association.



(Above) Portion of the apparatus room of the new Ogontz fire station. *(Right)* View of the recreation room in the rear of the station. Voters use this room during public election. There is also a kitchen and a special room for committee meetings. Numerous windows and fluorescent lighting provide good illumination throughout the building.

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You Need the Right Amount of "Fog"

THE DECEMBER, 1953, issue of the Nebraska *Smoke-Eater* had an interesting report of a fire which ruined a super market in Columbus, Nebraska. Columbus fire fighters under Chief Mike Novicki responded and were assisted by fire departments from Duncan, Schuyler and Bellwood.

Columbus Drillmaster Burley Grimes who reported the fire to the *Smoke-Eater* stated that it indicated the need for having the proper amount of water available for effective use of fog streams.

This building had a volume of 228,860 cu. ft. Drillmaster Grimes estimated that the output of the seven fog nozzles available for fire fighting would only produce 105,680 ft. of extinguishing atmospheres. Three 36-in. ventilators on the roof of the building allowed much of the created steam to be displaced without affecting the fire area. The story pointed out that each 1½-in. fog nozzle operating at 125 lbs. pressure produced 11,200 cu. ft. of steam; while 2½-in. nozzles created 19,200 cu. ft. of steam.

The *Smoke-Eater* referred to methods of application of fog stated by Chief Lloyd Layman in his books "Attacking and Extinguishing Interior Fires" and "Fire Fighting Tactics." (Both are available from the NFPA Executive Office —Ed.)

There were only three hydrants in the vicinity, supplied by 6-in. mains. Two 2½-in. lines were taken from each pumper, with four of the lines wyed to supply two 1½-in. lines.

However, the building was too heavily involved to allow fire fighters to make a successful attack. Later investigation indicated that a short circuit in electrical wiring had ignited the combustible fibreboard ceiling and the roof structure was almost completely involved before the fire was discovered by a passerby.

City of Los Angeles pumpers built by Crown Coach Corp. are equipped with WATEROUS pumps.

Los Angeles is hard to please

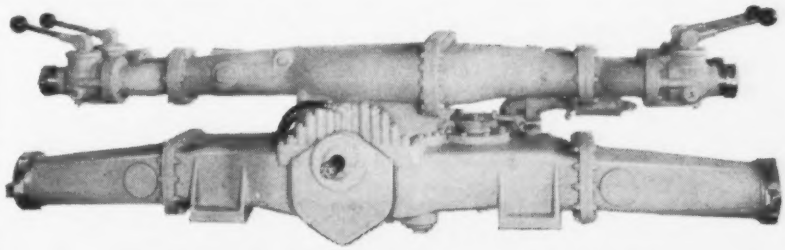
● Only five fire departments in the United States have earned a Class One rating from the National Board of Fire Underwriters. The Los Angeles Department is one.

How did Los Angeles qualify for such recognition? By the outstanding efficiency of its equipment, personnel and operating procedures . . . by leadership in equipment design . . . by writing rigid specifications for each piece of equipment it purchases.

It's no wonder then, that new pumpers built for Los Angeles are WATEROUS-equipped . . . in this case, with 1250 GPM centrifugals. Other cities, too, have found that there's a big difference in fire pumps. Across the nation, alert specification writers are now demanding that the pump body be built in two horizontal sections so the entire impeller assembly (including wear rings) can be removed without disturbing the setting of the pump in the chassis.

They ask, too, that the impeller shaft be supported at each end by oil-lubricated, anti-friction ball bearings that are *completely* protected from water by oil seal, flinger, and packing . . . another important WATEROUS feature.

If *you* are in the market for new pumping equipment you'll find "Preferred Fire Pump Specifications" very helpful. For your free copy, write WATEROUS COMPANY, 42 East Fillmore Avenue, St. Paul 1, Minnesota.



Model DCD 1250 GPM

Waterous
DEPENDABLE PUMPS
SINCE 1886

Statewide Fire Council in New Jersey

Based on a report by Herbert R. Bogardus, Manager, Technical Division, Fire Insurance Rating Organization of New Jersey, and member, NFPA Committee on Fire Department Equipment.

OF THE 560 municipalities in the State of New Jersey, 449 have volunteer fire departments, 34 have part paid and part volunteer fire department, 38 have fully paid departments and 48 have no fire departments but depend on neighboring communities to furnish protection under formal agreement or mutual understanding.

Experience has shown that there is a need for improving and coordinating all fire protection activities in the state. County, state and sectional associations of fire departments have been instrumental in increasing efficiency of the fire service in this state. However, it has long appeared that there is an opportunity for consolidation of effort in the fire service. To accomplish this a fire service council is now being established.

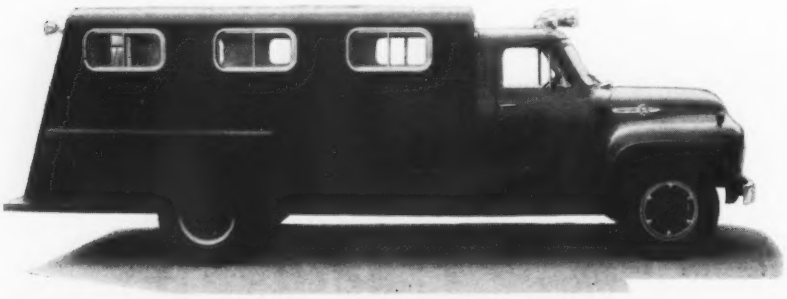
The New Jersey State Safety Council offered its cooperation and facilities for establishing such a council. Fred L. Barrows, Executive Vice President, conducted a meeting of interested persons in May, 1953, during which a committee was appointed to coordinate the activities of all participating fire service organizations. Another meeting in October had 20 firemen's organizations participating, with 30 others indicating desire to be affiliated.

As a result the New Jersey State Firemen's Advisory Council was organized with a constitution and by-laws adopted. Officers elected until the first annual meeting in March, 1954, included: President Herbert R. Bogardus, (see above — Ed); Vice President Walter G. Runyon, Middlesex County Fire School; Secretary Clarence H. Dougal, New Jersey State Fire Chief's Association; and Treasurer Edward H. Quick, Hunterdon County Firemen's Association.

The Council will operate as an independent non-profit, non-commercial, non-political advisory organization devoted to the advancement of all phases of fire protection and fire prevention, and will serve as a clearing house for information for the fire service in the State of New Jersey.

The Council will lend its efforts to the establishment and coordination of firemen's training programs at municipal and county levels and to encourage the building of fire schools in each county. The Council will also encourage legislation for fire prevention and assist the development of statewide mutual aid programs.

Fire Department Instructors Conference
Memphis, Tenn. — February 23-26, 1954



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Membership Report

A REVISED list of NFPA publications of particular interest to fire fighters has been prepared. It is designed for reference for any fire company or fire department desiring to compile an up-to-date library of fire fighting publications. It will be particularly helpful to fire fighters studying for promotional examinations, or for fire school instructors who wish to give their students a list of authoritative publications.

The list contains a convenient order form for the books and an application blank for NFPA membership, together with a description of the "six-copy" plan for FIREMEN magazine.

Quantity copies of the book list may be obtained free of charge by writing to NFPA Publications Department, 60 Batterymarch Street, Boston 10, Massachusetts.

NFPA Welcomes:

The following fire chiefs and fire departments who have joined the Association. Present NFPA Fire Department membership is 2,121 fire departments and 25,649 men.

Connecticut: U. S. Coast Guard Academy, New London.

Georgia: Chief H. K. Henderson, Americus Fire Department, Americus.

Illinois: Chief E. W. Steinbeck, Bloomingdale Volunteer Fire Department, Bloomingdale.

Iowa: Chief M. F. Brookshier, Hamburg Fire Department, Hamburg.

Kansas: Chief Milford Bolyard, South Hutchinson Volunteer Fire Department, South Hutchinson.

Massachusetts: North Reading Fire Department, North Reading; Sharon Fire Department, Sharon.

Michigan: Chief Franklin Basch, Glen Arbor Twp. Volunteer Fire Department, Maple City.

Missouri: Asst. Chief Cliff Pein, Jr., Claycomo Fire Department, Claycomo.

New Jersey: Chief Frank V. McCarthy, Highland Park Fire Department, Highland Park.

New York: Southport Volunteer Firemen, Inc., Elmira; West Hamilton Beach Volunteers, Hamilton Beach, Long Island.

Ohio: Chief C. A. Laubacher, Malvern Volunteer Fire Department, Malvern.

Saskatchewan: Carlyle Fire Department, Carlyle.

South Carolina: Chief Austin E. Graybill, North Augusta Fire Department, North Augusta.

Virginia: Chief David M. Burrier, Fort Belvoir.

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AND CONSERVE FIRE HOSE
May we send you one?

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575 East Milwaukee Detroit 2, Michigan

Deaths Decrease, Losses Increase in 1953 Fires

FIRE caused 12,360 deaths in the United States and Canada during 1953, according to estimates prepared by the NFPA Department of Fire Record on December 23, 1953. Estimated deaths in 1952 were 12,535. These estimates are based on U. S. Census figures and official Canadian statistics of prior years with adjustments for current trends as reflected in NFPA fire records.

Preliminary estimates indicate that fire in the United States caused $1,072,500,000 property damage in 1953, including $912,500,000 damage to buildings and contents and $160,000,000 loss in aircraft, motor vehicles, forest and other fires not involving buildings.

The General Motors fire at Livonia, Michigan, accounted for approximately half the increase in building and contents loss in 1953. If the trend in Canadian losses is similar to that in the United States the total losses in the two countries in 1953 will be approximately $1,160,000,000.

The National Board of Fire Underwriters estimated the loss for the first 11 months of 1953 at $819,960,000, an increase of 15.3 percent over the corresponding 11-month period for 1952.

Conflagration at Pusan, Korea

SHORTLY before the November 28 fire in this city destroyed a U. S. Army headquarters base section, 5,000 to 6,000 dwellings, and left 50,000 persons homeless, FIREMEN received a significant report from NFPA member Chief W. G. Stapleton, 546th Engineer Fire Fighting Company in Pusan. It concerned two multiple alarm responses which occurred on September 25.

The first incident involved a fire in a chemical warehouse which contained a large amount of tear gas containers. Five engine companies responded to four alarms and fire fighters had to wear U. S. Army gas masks during the 32 hours necessary to gain control.

At the same time this fire was in progress another multiple alarm fire was reported. This involved 27 dwellings but was controlled after two hours by 5 engine companies supported by three 1,000 gallon tank trucks.

11th Edition of NFPA Handbook

THE 11th Edition of the NFPA Handbook of Fire Protection is expected to be ready for distribution early in 1954. Orders are now being accepted by the NFPA Publications Department. The new edition will contain more than 1600 pages of important information on fire protection and fire control and is almost a "must" for any fire fighter taking promotional examinations. Price for a single copy is $10.50.

Firemen Training in New York State, 1952-53

DR. LEONARD C. SILVERN, Training Coordinator of the New York Bureau of Fire, reports that during the past fiscal year 10,818 fire fighters received intermediate and advanced training. Included in this total were 4,543 trainees who used basic instruction; 3,549 who received intermediate instruction; 2,734 who received advanced fire fighting instruction, and 52 who participated in special civil defense courses. In the year ending June 30, 1953, 2,329 State Fire Training Certificates were awarded to firemen who completed all three courses.

The Bureau of Fire Mobilization and Control prepared and developed intermediate and advanced workbooks and completely revised Basic Lesson Plans which had been under field test for two years. In addition, several new films were added to the training aids library.

New York State does not have an annual fire school but supplies material and administrative guidance to County Fire Instructors, who are State employees on a part-time basis and who are training officers in their respective counties. These men instruct fire fighters throughout the year in every county with the exception of Nassau and Suffolk Counties in the City of New York.

In addition many in-service programs are operated by fire departments with many of the fire training officers participating in the Annual Instructors Conference. Many municipal fire departments are currently following the State Fire Training Program. Included in this group are Binghamton, Utica, Ogdensburg, Fulton, Poughkeepsie, Newbury and others.

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You can have a portable water supply for fire fighting in rural areas. Write for free folder to *Harodikes, Inc.*, North Dighton, Mass. . . . Do you have the latest information on how to dry your fire hose? Write to *The Circul-Air Corp.*, 575 E. Milwaukee, Detroit 2, Michigan. . . . Before you buy uniforms and accessories, check the Russell Uniform catalog. Write to *Russell Uniform Co.*, 192 Lexington Ave., New York 16, New York. . . . How to check for explosive gases and vapors is the subject of new literature on the Explosimeter. Write *Mine Safety Appliances Co.*, Pittsburg 8, Pa. . . . Need chairs or tables for your station house? Write for catalog to *J. P. Redington & Co.*, Dept. 97, Scranton 2, Pa. . . . A new Warning Signal Bulletin on sirens and flashlights is announced by *Federal Enterprises, Inc.*, 8717 N. State St., Chicago 19, Ill. Write for your copy today. . . . Looking for data on midship or front mounted fire pumps? You'll want the booklet offered by *W. J. Darley & Co.*, Chicago 12, Ill. . . . Handy cabinets with "See Thru" drawers for maintenance shops and station house use are now available. Write for literature to *General Industrial Co.*, 5738 N. Elston Ave., Chicago 30, Ill.

For a "complete story on resuscitation," write for illustrated booklet to *J. H. Emerson Co.*, 22 Cottage Park Ave., Cambridge, 40, Mass. . . . Two-way radio for fire departments will be explained at no obligation by the skilled Motorola engineer in your vicinity. Write to *Motorola Communications and Electronics, Inc.*, 900 N. Kilbourne Ave., Chicago 51, Ill. . . . Get latest information on Big Beam dry-cell and storage-battery lights for your department. Drop a card to *U. C. Lite Mfg. Co.*, 1050 W. Hubbard St., Chicago 22, Ill. . . .

The new issue of "Fire Station Design" booklet — 60 pages of plans and drawings — is yours for the asking. Write *The Circul-Air Corporation*, 575 E. Milwaukee St., Detroit 2, Mich. . . . Complete story on Acme Gas Masks for all fire hazards is now available. Write *Acme Protection Equipment Co.*, 3037 W. Lake St., Chicago 12, Ill. . . . New illustrated literature on RCA 2-way Mobile Radio is announced. Write for Catalogs 30 and 3011 to *Engineering Products Department, RCA Victor Division*, Camden 2, N. J. . . . Every fire company will find the new Braxmar Badges Catalog useful. Write to *C. G. Braxmar Co., Inc.*, 216 East 45th St., New York 17, New York. . . . Information on a complete line of fixed and mobile communications receivers is available from *Radio Apparatus Corporation*, 55 N. New Jersey St., Indianapolis 4, Indiana. . . .

Get the facts on new Model 7FP McCulloch portage centrifugal fire pump! Ask for performance chart from *McCulloch Motors Corp.*, Los Angeles 45, California. . . . You should know about the outstanding features of Howe fire apparatus. Write for illustrated literature to *Howe Fire Apparatus Co.*, Dept. FM2, 1404 W. 22nd St., Anderson, Indiana. . . . Get more facts about Rockwood equipment by writing for 12-page booklet "Rockwood Fire Fighting Products" to *Rockwood Sprinkler Co.*, 88 Harlow St., Worcester 5, Mass. . . .

Frost-proof design is just one of the cold weather safety features for Barton-American front mounted fire pumps. Write for UA Pump Bulletin No. 8330-B to *American-Marsh Pumps*, Battle Creek, Michigan. . . . For colorful file catalog giving complete information on aluminum fire ladders, write *Duo-Safety Ladder Corporation*, 809 Ninth St., Oshkosh, Wisconsin. . . . Outstanding features of the new 1954 model of the Original High-Pressure Fire Fighter are detailed in a new complete catalog. Write *John Bean*, Dept. 127, Lansing 4, Michigan.

New 26 pound National Aero-O-Foamster delivers water or foam stream just by finger pressure on trigger valve. For illustrated literature write *National Foam System, Inc.*, West Chester, Pa. . . . Free samples of Odor Fix Concentrate, a new type deodorant, enough to make five quarts of solution for reduction of smoke and fire odor, may be obtained by writing to *Thompson Chemicals Corp.*, St. Louis 3, Missouri. Be sure to mention FIREMEN Magazine.

Ten new bulletins describing latest improvements in General Electric radio communication equipment are announced. Write to Inquiry Section, *G-E Electronics Div.*, Electronics Park, Syracuse, N. Y. . . . 3-inch by 5-inch dashboard stickers for trucks and other vehicles illustrating steps necessary to put dry chemical fire extinguishers into action are being distributed by *Ansul Chemical Co.*, Marinette, Wisc. . . . Do you have the story on the new Cardox "Foam-Maker" pump and turret nozzle, recently announced? Ask for Cardox "Foam-Maker" systems information from *Cardox Corporation*, Bell Bldg., Chicago 1, Ill. . . . Why your community should have a municipal fire alarm system is graphically described in a new 24-page booklet available at the *Gamewell Company*, Newton Upper Falls 64, Mass.

Does every man in your department have a subscription to FIREMEN?

Fire Protection Year Book — 1954

This 14th Fire Protection Year Book — 408 pp., published by Fire Protection Review, G. F. D. Pratt, Editor, Bouverie House, 154 Fleet Street, London EC4, gives a complete fire services directory for the British Commonwealth and Empire with wide acceptance throughout the world. The new book has a directory of local CD officers and regional officials. Directories of fire fighting equipment and equipment suppliers have been enlarged. There are directories of public and industrial fire brigades in the United Kingdom and in the British Commonwealth. There are sections covering governmental agencies and organizations dealing with fire fighting and prevention. Other sections deal with the legal aspects of fire safety and fire engineering data. The price postpaid as 12/6 or $1.75 in U. S. money.

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INDEX TO ADVERTISERS

	Page
Akron Brass Manufacturing Company, Inc.	27
American Fire Apparatus Company	23
John Bean Division, Food Machinery and Chemical Corporation	3
Boston Woven Hose & Rubber Company	25
Cairns & Brother, Inc.	17
Chesebrough Manufacturing Company, Cons'd.	18
Circul-Air Corporation	22
W. S. Darley & Company	24
Federal Enterprises, Inc.	21
Gamewell Company	4
Hale Fire Pump Company	16
Midwestern Manufacturing Company	21
Mine Safety Appliances Company	2
Powhatan Brass & Iron Works	16
J. P. Redington & Company	19
Rockwood Sprinkler Company	13
Sharpsville Steel Fabricators, Inc.	20
D. B. Smith & Company	15
Waterous Company	19

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